Remarks

Applicant traverses the prior art rejections of pending claims 1-10 and submits that there is no reason to combine the cited references and that the Office Action relies upon improper conclusory statements in asserting obviousness, thereby directly contradicting the U.S.P.T.O. guidelines for maintaining an obviousness rejection under KSR ("Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."). *See KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007).

The specifics of the instant Office Action dated August 2, 2007 are as follows: claims 1 and 9 stand rejected under 35 U.S.C. 103(a) over Nishio *et al.* (U.S. Patent No. 5,774,842) in view of Kim (U.S. Patent No. 5,636,295); claims 1-3 and 9-10 are rejected under 35 U.S.C. 103(a) over Nishio *et al.* (U.S. Patent No. 5,774,842) in view of Yutaka Goto, "Effects of Noise on the Interpolation Accuracy for Apodized FFT Spectra of Time-Domain Damped Signals", Department of Information Science Electronics, Tsukuba College of Technology, Tsukabashi, Ibaraki, 305 Japan, Volume 49, Number 12, 1995. The objection to claims 1-10 due to use of the word "substracting" is overcome by the use of the suggested more common word "subtracting".

Applicant respectfully traverses the Section 103(a) rejections of claims 1 and 9 over Nishio in view of Kim. Applicant's reasons for the traversal are presented below under respective headings. Generally, these reasons concern the impropriety of the combination from the contexts of the lack of any evidence and/or reason to combine the cited references. Applicant also submits that the rejection is improper because the Office Action has not established that the cited equation $e = (S^2/12)^{1/2}$ performs the same functionality as Applicant's claimed invention. However, further discussion regarding this matter is unnecessary at this time because the rejection fails due to the impropriety of the asserted combination as discussed below.

There Is No Reason To Combine The Cited References And The Office Action Relies Upon Improper Conclusory Statements In Asserting Obviousness.

The asserted basis to combine is contrary to the requirements of Section 103 and relevant law. "A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007). In this instance, the Office Action improperly concludes that it would be obvious to combine the cited equation $e = (S^2/12)^{1/2}$ with the Nishio reference "for the benefit of reducing quantization noise or error caused by the quantization unit and determining the signal to quantization noise ratio in Nishio." *See, e.g.,* page 6:21 to page 7:2 of the Office Action dated 11/30/2006. However, this conclusion is unsupported by any rationale in the cited references. The case law is clear that "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR,* 127 S. Ct. at 1741.

More specifically, the Office Action makes a general statement as to the reason one would combine the references without addressing how they would be combined and without providing any explanation as to why one would combine the specific elements of the cited references. For example, the Office Action's improper conclusion that it would be obvious to combine the teachings for the benefit of reducing quantization noise or error caused by the quantization unit fails because the cited portions of Nishio already teach determining the quantization error. *See, e.g.,* Figure 8 and Col. 5:16-20. Thus, the Office Action's alleged reason for combining the references is to do something that is already done by Nishio. The Office Action provides no further explanation as to the reason for the particular combination.

Moreover, Applicant is unable to determine the particular combination being asserted by the Office Action as it appears that the Office Action is merely identifying general concepts from the various references and arranging them in a manner taught by Applicant's disclosure. Thus, Applicant submits that the Office Action appears to be improperly resorting to hindsight reconstruction based upon Applicant's disclosure in an attempt to arrive at a combination that corresponds to the claimed invention. *See, e.g.,* M.P.E.P. § 2142.

In view of the above, the Office Action has not provided any evidence as to why one of skill in the art would find the asserted combination obvious as required. Accordingly, the Section 103(a) rejection of claims 1 and 9 is improper and Applicant requests that it be withdrawn.

The Asserted Combination Has Not Been Addressed To The Specificity Of The Claim Limitations And Thus Does Not View As A Whole: 1) The Limitations And 2) The Cited References.

The asserted combination has not been addressed to the specificity necessary to identify an intelligible structure or method. M.P.E.P. § 2141.02 requires that the Examiner consider both the invention and the prior art teachings as a whole. A review of the Office Action and the cited references does not clarify what structure or method the Office Action asserts as corresponding to Applicant's claimed invention. For example, Applicant submits that the references do not show, and the Office Action does not explain, how the cited equation $e = (S^2/12)^{1/2}$ is to be used with the Nishio reference. In another example, Applicant also submits that the references do not show, and the Office Action does not explain, how the cited teachings of the Kim reference are to be used with the Nishio reference. Therefore, the Section 103(a) rejection of claims 1 and 9 is improper and Applicant requests that it be withdrawn.

The Asserted Combination Would Result In An Inoperable Embodiment.

Applicant respectfully submits that there is no motivation for a skilled artisan to combine the cited references, especially since the proposed combination would not result in an operable embodiment. Pursuant to M.P.E.P. § 2143.01, a Section 103(a) rejection cannot stand where the asserted combination would render the reference unfit for its intended operation. *See also In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984).

With regard to the Office Action's asserted combination of the equation $e = (S^2/12)^{1/2}$ and the Nishio reference, the incorporation of this equation into the cited portions of the Nishio reference is illogical. More specifically, the Nishio reference teaches determining the quantization error that is generated at the time of quantization by using subtractor 12 in order to subtract the input to the quantizer 11 from the output of the quantizer 11. *See, e.g.*, Figure 8 and

Col. 5:16-20. The Office Action appears to propose incorporating the equation $e = (S^2/12)^{1/2}$ into the subtractor 12 of Nishio. However, Applicant submits that it would be illogical and impractical to incorporate this equation into the subtractor 12. For example, subtractor 12 of the Nishio reference determines the quantization error by a simple comparison of two inputs, one without errors and one with errors, whereas the cited equation has no corresponding inputs (*i.e.*, its only input is a step variable S). Thus, inserting the cited equation into Nishio's application would be illogical and would render the Nishio reference unfit for its intended operation of removing the quantization error. *See, e.g.,* Nishio's Abstract. Accordingly, the rejection of claims 1 and 9 is improper and cannot stand.

Moreover, as discussed above, the Nishio reference determines the quantization error that is generated by the quantizer 12. *See, e.g.,* Figure 8 and Col. 5:16-20. Thus, there would be no reason to combine an equation for determining the quantization error with the Nishio reference as proposed by the Office Action, because Nishio already determines the quantization error. At best, such error calculation would be redundant. Therefore, the Section 103(a) rejection of claims 1 and 9 is improper for lack of motivation or suggestion to combine and Applicant requests that it be withdrawn.

With regard to the Office Action's asserted combination of the Nishio and Kim references, there is no motivation to combine the cited teachings of Kim with Nishio because it would be illogical to combine Kim's decoding of discrete cosine transform coded image signals with the analog-to-digital conversion of audio signals taught by Nishio.

One of skill in the art would recognize that the quantization discussed in the Kim reference is for the purposes of data compression. (*See, e.g., The JPEG Still Picture Compression Standard*, Wallace, Gregory K., at Section 4.2 <http://white.stanford.edu/~brian/psy221/reader/Wallace.JPEG.pdf>). In contrast, the quantization error of the Nishio reference is introduced during an analog-to-digital conversion. The Kim reference teaches correcting for errors introduced via a frequency-domain quantization through the use of a random noise generator 51. Accordingly, one of skill in the art would recognize that the asserted combination of the Nishio and Kim references would be illogical because the windowing aspect of the Kim reference does not correspond to quantization errors introduced during an analog-to-digital conversion of an audio signal.

For example, the cited portions of the Kim reference teach that the windowing block 10 divides the image signal into a number of sub-image signals by multiplying the image signal with a known window weight factor (*see, e.g.,* Figure 2 and Col. 3:9-14), and that the quantization noise signal is divided into sub-noise signals identical to the sub-image signals in terms of their dimension (*e.g.,* 8x8, *see* Col 3:54-62) at the windowing block 54 (*see, e.g.,* Figure 4 and Col. 4:50-53). The Office Action asserts that "it would have been obvious to one of ordinary skill in the art to incorporate the windowing function as taught in the Kim for the benefit of dividing the image signals into sub-images." *See* page 7:10-12 of the Office Action dated 11/30/2006. However, the Nishio reference is directed towards the processing of audio signals, as such, Nishio has no corresponding image signals to divide into sub-images. Thus, there would be no motivation for one of skill in the art to combine Kim's windowing with the Nishio reference because the asserted combination would be indiscernible and/or inoperable. Accordingly, the Section 103(a) rejection of claims 1 and 9 is improper and Applicant requests that it be withdrawn.

Applicant respectfully traverses the Section 103(a) rejections of claims 1-3 and 9-10 over Nishio in view of Yutaka Goto. Applicant's reasons for the traversal are presented below under respective headings. Generally, these reasons concern the impropriety of the combination from the contexts of the lack of any evidence and/or reason to combine the cited references. Applicant also submits that the rejection is improper because the Office Action has not established that the combination of several equations taught by the Yutaka Goto article would result in an equation that is the same as Applicant's claimed invention. However, further discussion regarding this matter is unnecessary at this time because the rejection fails due to the impropriety of the asserted combination as discussed below.

There Is No Reason To Combine The Cited References And The Office Action Relies Upon Improper Conclusory Statements In Asserting Obviousness.

The asserted basis to combine is contrary to the requirements of Section 103 and relevant law. "A patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007). In this instance, the Office Action improperly concludes that it would be obvious to combine the cited teachings of Yutaka

Goto with the Nishio reference "for the benefit of determining the power spectrum of noise as a function of the quantization noise and some windowing function." *See, e.g.,* page 6:20 to page 7:2 of the instant Office Action. However, this conclusion is unsupported by any rationale in the cited references. The case law is clear that "Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR,* 127 S. Ct. at 1741.

More specifically, the Office Action makes a general statement as to the reason one would combine the references without addressing how they would be combined and without providing any explanation as to why one would combine the specific elements of the cited references.

At a first example, the Office Action improperly concludes that it would be obvious to incorporate a combination of the equations taught by Yutaka Goto "into the system of Nisho, in the manner as claimed." *See, e.g.,* page 6:20-22 of the instant Office Action. Applicant is unable to determine the particular combination being asserted by the Office Action as no explanation is provided regarding how this combination of equations is to be incorporated into Nisho. Applicant submits that the references do not show how to combine the cited teaching. It appears that the Office Action is merely identifying general concepts from the references and arranging them in a manner taught by Applicant's disclosure. Thus, Applicant submits that the Office Action appears to be improperly resorting to hindsight reconstruction based upon Applicant's disclosure in an attempt to arrive at a combination that corresponds to the claimed invention. *See, e.g.,* M.P.E.P. § 2142.

As a second example, The Office Action simply concludes that one would combine the cited equations of the Yutaka Goto reference without providing any reason as to why one of skill in the art would combine these equations. It appears that the Office Action is combining these equations in an attempt to show correspondence to Applicant's equation. Thus, Applicant submits that the Office Action appears to be improperly relying upon Applicant's disclosure as the basis to combine these equations in an attempt to arrive at Applicant's equation.

In view of the above, the Office Action has not provided any evidence as to why one of skill in the art would find the asserted combination obvious as required. Accordingly, the Section 103(a) rejection of claims 1-3 and 9-10 is improper and Applicant requests that it be withdrawn.

The Asserted Combination Would Result In An Inoperable Embodiment.

Applicant respectfully submits that there is no motivation for a skilled artisan to combine the cited references, especially since the proposed combination would <u>not</u> result in an operable embodiment. Pursuant to M.P.E.P. § 2143.01, a Section 103(a) rejection cannot stand where the asserted combination would render the reference unfit for its intended operation. *See also In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984).

With regard to the Office Action's asserted combination of Yutaka Goto's equations and the Nishio reference, the incorporation of these equations into the cited portions of the Nishio reference is illogical. More specifically, the Nishio reference teaches determining the quantization error that is generated at the time of quantization by using subtractor 12 in order to subtract the input to the quantizer 11 from the output of the quantizer 11. *See, e.g.,* Figure 8 and Col. 5:16-20. The Office Action appears to propose incorporating Yutaka Goto's equations into the subtractor 12 of Nishio. However, Applicant submits that it would be illogical and impractical to incorporate this equation into the subtractor 12. For example, subtractor 12 of the Nishio reference determines the quantization error by a simple comparison of two inputs, one without errors and one with errors, whereas Yutaka Goto's equations do not have any corresponding inputs. Thus, inserting the cited equation into Nishio's application would be illogical and would render the Nishio reference unfit for its intended operation of removing the quantization error. *See, e.g.,* Nishio's Abstract. Accordingly, the rejection of claims 1-3 and 9-10 is improper and cannot stand.

Moreover, as discussed above, the Nishio reference determines the quantization error that is generated by the quantizer 12. *See, e.g.,* Figure 8 and Col. 5:16-20. Thus, there would be no reason to combine an equation for determining the quantization error with the Nishio reference as proposed by the Office Action, because Nishio already determines the quantization error. Therefore, the Section 103(a) rejection of claims 1-3 and 9-10 is improper for lack of motivation or suggestion to combine and Applicant requests that it be withdrawn.

   In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

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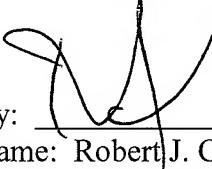
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